Course: PHYS 522
Term: Spring 2016
Room: HBH 22
Class: TTH 2:30-3:45PM

INSTRUCTOR CONTACT INFORMATION

Instructor: Peter Nordlander
Office: BH 308
Email: nordland@rice.edu
Office Hours: After consultation

Grader: Guangyuan Yu; Rm BRC 1080A; 832-925-0301

COURSE OBJECTIVES AND LEARNING OUTCOMES

Quantum Theory of Radiation; Coherent and Squeezed States; Quantum Distribution Theory; Field-Field and Photon-Photon Interferometry; Atom-Field Interaction: Semi classical Theory; Atom-Field Interaction: Quantum Theory; Quantum Theory of Damping; Resonance Fluorescence; Quantum Theory of the Laser; Squeezing via nonlinear optical processes; Atom Optics; EPR; Hidden Variables; Bell's Theorem; Quantum nondemolition measurements; Quantum Plasmonics; Electromagnetically Induced Transparency, Super radiance; Lamb shift

REQUIRED TEXTS AND MATERIALS

Quantum Optics by M.O. Scully and M.S. Zubairy, Cambridge

EXAMS AND PAPERS

Final Oral Exam

GRADE POLICIES

The grade is determined from the homework (80%) and the final exam (20%).

ABSENCE POLICIES

The students should try to attend class since the lectures include material beyond the book

RICE HONOR CODE

In this course, all students will be held to the standards of the Rice Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook at http://honor.rice.edu/honor-system-handbook/. This handbook outlines the University's expectations for the integrity of your academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process.

DISABILITY SUPPORT SERVICES

If you have a documented disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Disability Support Services (Allen Center, Room 111 / adarice@rice.edu / x5841) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

SYLLABUS CHANGE POLICY

This syllabus is only a guide for the course and is subject to change with advanced notice.